

Viewing Multiple Graphs in R

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P311, 2011

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- 1 Introduction
- 2 Recalling Multiple Graphics Plots
- 3 Multiple Graphics Device Windows
- 4 Multiple Plots in One Graph

Introduction

- R has very powerful and flexible systems for creating and viewing graphics.
- However, by default, it opens one window when the first graph is plotted.
- As additional plots are created, the default behavior is to overwrite the first graph.
- Here, we introduce methods for keeping graphs available and/or displaying several graphs in a single figure.

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Recalling Multiple Graphics Plots

- On occasion, especially when doing a classroom demonstration with R, you may wish to keep previous graphs available so that you can go back to them easily.
- R has a system for doing that, although it is not “well-advertised.”
- We’ll illustrate it briefly for the PC. Apple and Linux users can probably find a simple variant of these instructions.

Recalling Multiple Graphics Plots

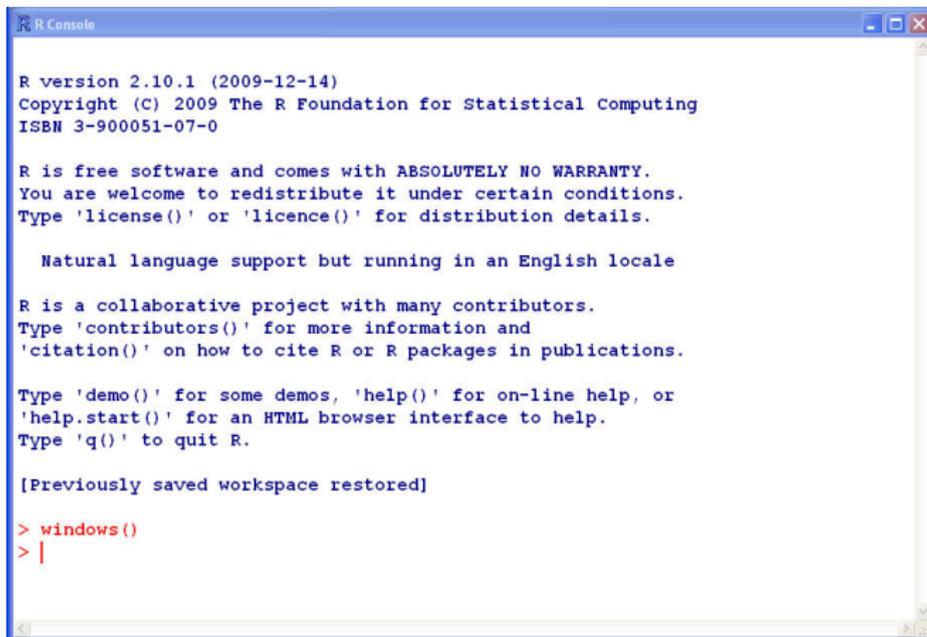
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Recalling Multiple Graphics Plots

- Open R
- Then, type and enter the command `windows()`



```
R Console  
  
R version 2.10.1 (2009-12-14)  
Copyright (C) 2009 The R Foundation for Statistical Computing  
ISBN 3-900051-07-0  
  
R is free software and comes with ABSOLUTELY NO WARRANTY.  
You are welcome to redistribute it under certain conditions.  
Type 'license()' or 'licence()' for distribution details.  
  
Natural language support but running in an English locale  
  
R is a collaborative project with many contributors.  
Type 'contributors()' for more information and  
'citation()' on how to cite R or R packages in publications.  
  
Type 'demo()' for some demos, 'help()' for on-line help, or  
'help.start()' for an HTML browser interface to help.  
Type 'q()' to quit R.  
  
[Previously saved workspace restored]  
  
> windows()  
> |
```

Recalling Multiple Graphics Plots

- This will open up a blank Windows Graphics Device window, and will shift the Windows “focus” to that window, as shown on the next slide.

Recalling Multiple Graphics Plots

The screenshot displays the R GUI interface. The main window is titled "RGui" and contains two sub-windows:

- R Console:** This window shows the R startup sequence. It displays the version (2.10.1), copyright information (© 2009 The R Foundation for Statistical Computing), and a license notice. It also shows the message "[Previously saved workspace restored]" and the execution of the `windows()` command. The prompt `> |` is visible at the bottom.
- R Graphics: Device 2 (ACTIVE):** This window is currently empty and greyed out, indicating that no graphics have been plotted yet.

Recalling Multiple Graphics Plots

- At the top of the screen, you will notice that the menu system has changed.
- It now includes the option *History*.
- Click on that option.



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- This will open up a flying menu, which includes the option *Recording*
- Click on that option to activate graphics recording.



Recalling Multiple Graphics Plots

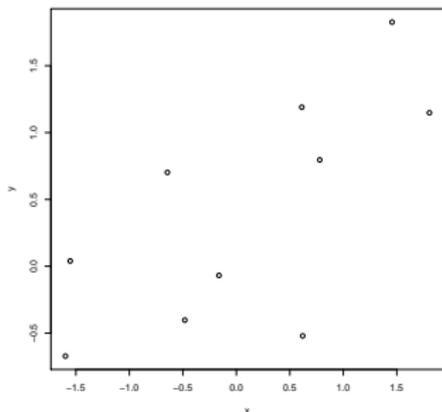
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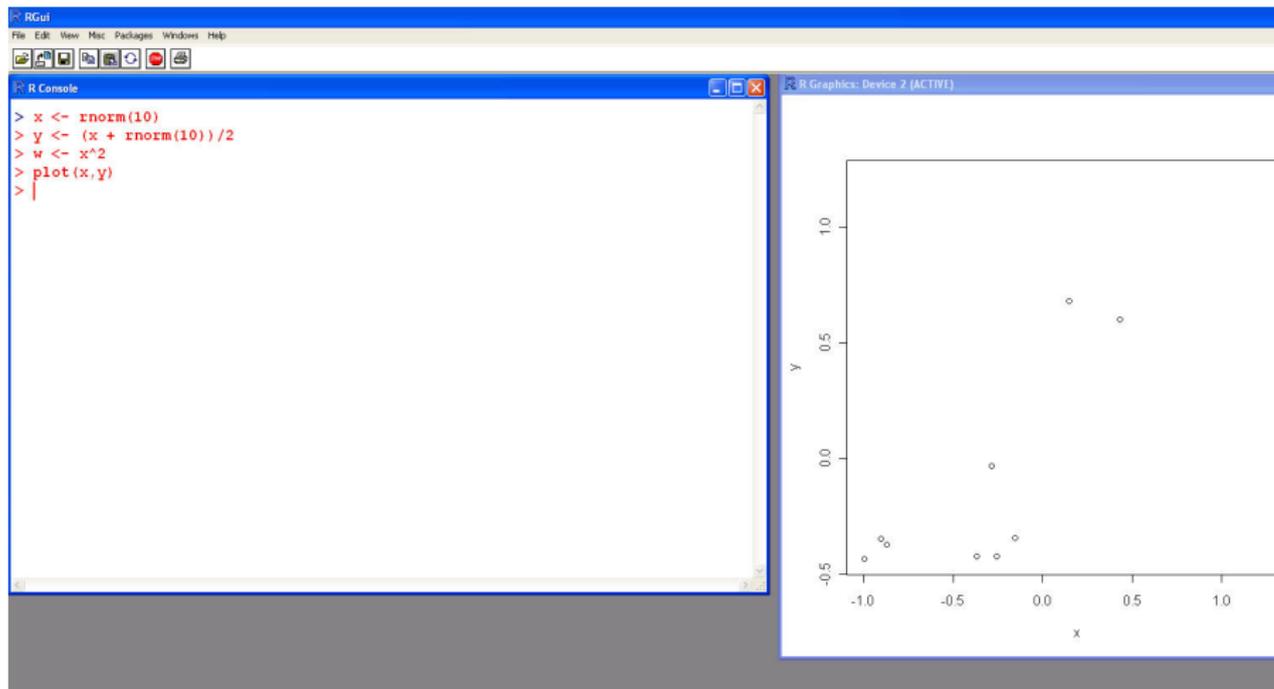
Recalling Multiple Graphics Plots

- With that option available, plots you create will be saved in multiple windows, and will be available for viewing.
- Let's create several graphs and see how that works.

```
> x <- rnorm(10)
> y <- (x + rnorm(10))/2
> w <- x^2
> plot(x,y)
```

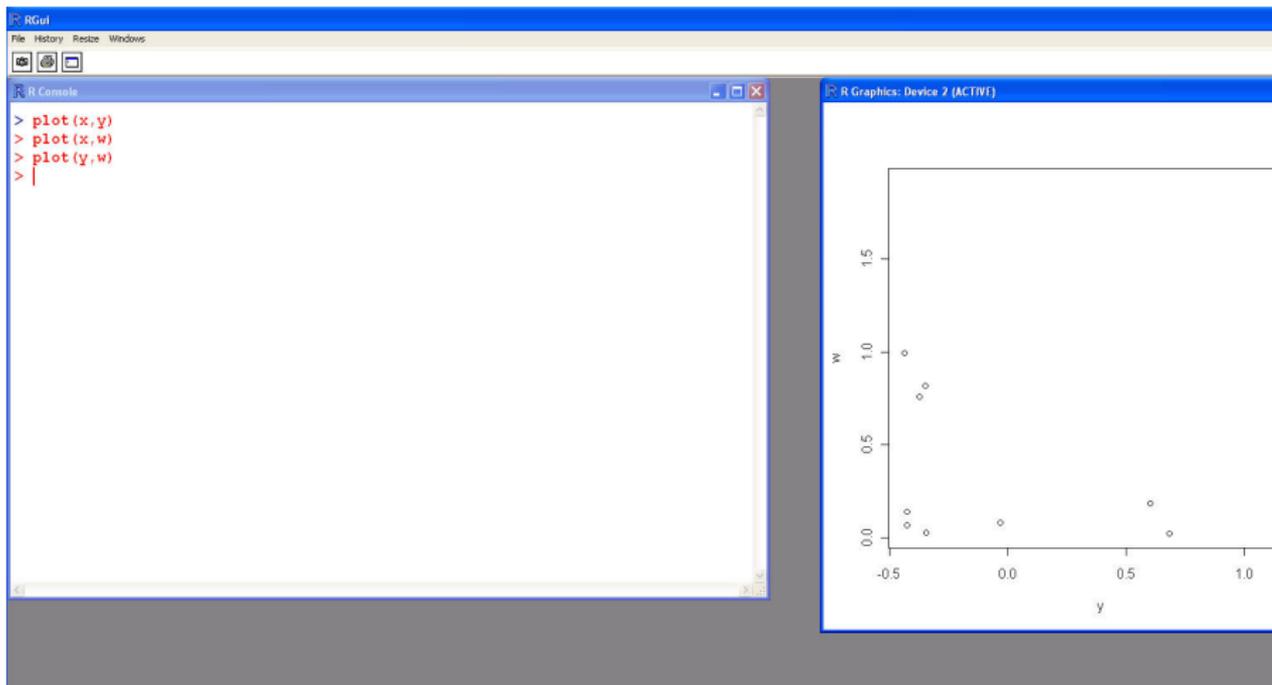


Recalling Multiple Graphics Plots



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Recalling Multiple Graphics Plots

- Now, with focus on the Graphics Device Window, you can page through the graphs using the *PageUp* or *PageDown* keys.
- You can also stop recording at any time by going back into the history menu.

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Multiple Graphics Device Windows

- So far, we've explored a method for saving and recalling our plots while displaying them in one window.
- It is also possible to open several different windows, and direct graphics to them, using the `dev.cur()` and `windows()` commands.
- We'll take a quick look at this in lecture. The key point is that each windows graphics device window has a number, and you can direct output to a window by making it *active* using the `dev.cur()` command.

Multiple Graphics Device Windows

- Eli Hooten, one of our students, has constructed some demo code for this which I've placed in a file called *MultipleGraphWindows.txt* on the website. This code should be used in conjunction with the data files from the Chapter 2 lecture notes on Descriptive Statistics. (Thanks Eli!)

Multiple Plots in One Graph

- R can also automatically compile several graphics into one array.
- For example, suppose we want to present 4 plots in a 2×2 array.

```
> par(mfrow=c(2,2))  
> plot(x,y)  
> plot(x,w)  
> plot(y,w)  
> plot(w,y)
```

